Executive Summary

Mission: The mission of the Vermont Strategic Highway Safety Plan is to minimize the occurrence and severity of crashes, related human suffering and economic losses on the Vermont transportation network. We will accomplish this by identifying and implementing achievable and effective education, enforcement, engineering, and emergency response initiatives (the four E's).

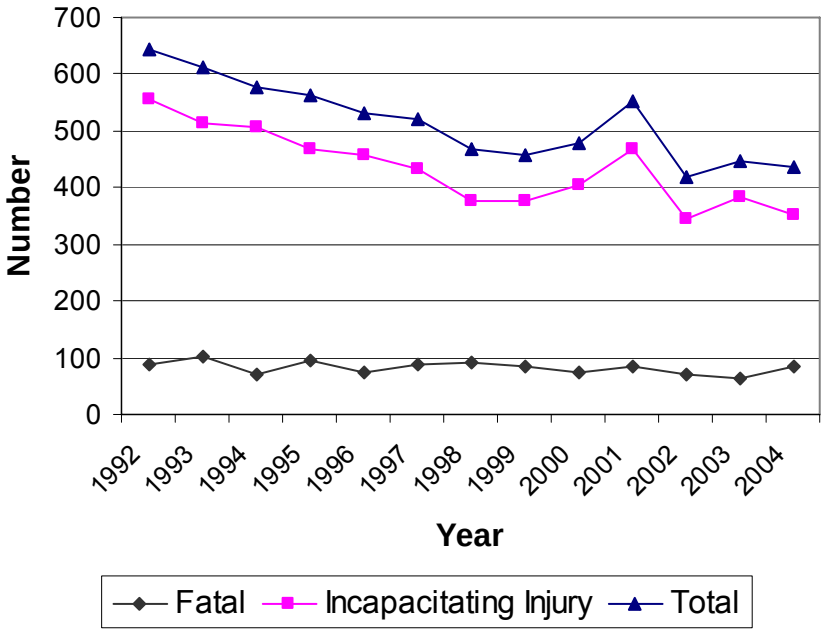
Goal: The goal of the Vermont Strategic Highway Safety Plan is to reduce the number of major crashes to 350 or fewer each year by 2010 (from 437 in 2004) thus resulting in 40 fewer fatalities and 26 fewer incapacitating injuries per year.

Introduction and Background

Over the past several years, the motor vehicles related fatalities and injuries per 100 million vehicle miles traveled in Vermont have been below national levels. For example, in 2003, Vermont's injury and fatality rates were 55.7 and 0.87 respectively, compared to 100 and 1.48 nationally.

Figure 1 displays the historical trend in crashes that resulted in fatalities and incapacitating injuries in Vermont between 1992 and 2004 (combined, these crashes are referred to major crashes in this document). Figure 1 illustrates that the total number of major crashes steadily declined between 1992 and 1999 before starting to fluctuate between 2000 and 2004. Overall, the total number of major crashes was substantially less in 2004 (437 crashes) than in 1992 (643 crashes), representing a 32 percent decrease in the annual number of major crashes during the time period.

Figure 1. Vermont Major Crashes, 1992-2004



Despite this decline and the lower than national average fatality and injury rates, the fact is that in Vermont, for the last five years, an average of 700 persons have been seriously injured and another 83 persons have died each year from being in a motor vehicle crash. The consequence to individuals, families and the society are considerable. The social and economic future of any family can be forever shattered when a family member, especially the "bread winner" is killed in a traffic crash. Likewise, a business can be equally devastated with the loss of a valued employee and the potential loss of business. While the human suffering is enormous and often immeasurable, the economic impact of major crashes also bears consideration. Vermont estimates of economic losses caused by fatal and serious injury crashes were at least $483 million in 2004.

The American Association of State Highway and Transportation Officials (AASHTO) has developed a framework for comprehensive highway safety planning that has the promise of making significant gains in the reducing beyond current numbers. This framework is referred to as the Strategic Highway Safety Plan (SHSP) and emphasizes addressing areas where significant reductions in crashes can be achieved through the involvement of safety stakeholders from all jurisdictions within a State evaluating the State's safety needs based on hard data and formulating and implementing countermeasures to improve safety.

At the basis of the SHPS concept is the recognition that highway safety is not the affair of only one organization in one specific domain but the responsibility of many organizations in many domains. In the world of highway safety, these domains are referred to as the four E's, namely, Engineering, Education, Enforcement and Emergency Services. Also at the basis of this concept is the understanding that resources are limited and that resources should be used where the return is expected to be the greatest. AASHTO has identified twenty-two such emphasis areas where it is believed that a significant number of major crashes could be prevented. The SHSP identifies a subset of seven of these areas where a significant

Currently, State, regional and local organizations have been carrying out a number of independent safety initiatives that individually have helped to reduce injuries and fatalities on highways. The SHSP provides a detailed guide for multiple jurisdictions to collaborate on delivering safety services more efficiently and effectively and where it counts the most to achieve significant gains in reducing deaths and injuries on Vermont roads. The Strategic Highway Safety Plan contains strategies that if implemented by the safety partners could significantly improve highway safety in our State.

Development Process

The SHSP was developed through a collaborative and voluntary process involving several organizations responsible for highway safety in Vermont (safety partners). The process was led by five State Departments and Agencies, namely, Transportation, Public Safety, Health, Education and Labor. The Commissioners and Secretaries of these State entities formed an **Executive Committee** which provided the overall direction to the SHSP development and made key decisions.

The overall management of the SHSP development was assured by a **Core Group** of the same State entities and also included representatives from the Federal Highway Administration and the American Traffic Safety Services Association.

The safety partners who participated in the development of the SHSP were referred to as the **Working Group**. This group guided the technical work of the process, including the identification of critical emphasis areas, and the development of strategies and work plans.

The development of the SHSP was officially launched on December 12, 2005, when Governor Douglas kicked off the development process at a meeting attended by more than 100 safety

partners. The purpose of this meeting was to first explain the purpose of the SHPS and to then ask the safety partners to identify key issues related to fatal and serious injury crashes. Safety partners were invited again to a second meeting on January 20, 2006, to further discuss the critical emphasis areas selected and to commit time towards the development of the plan by joining one of the seven task teams related to the critical emphasis areas. From this meeting on, the task teams met at regular intervals to identify strategies and develop work plans for each of the strategies. The strategies and work plans were presented at a meeting of the safety partners on September 7, 2006. Participants broke up into small groups to further discuss and validate the strategies for inclusion in the SHSP.

The entities that participated in the development of the SHSP by attending the work group meetings and/or the task team meetings are listed below. An asterisk denotes an entity that was specifically part of a task team.

AAA Northern New England
Addison Regional Planning Commission*
American Traffic Safety Services Association*
Associated General Contractors of Vermont
Barre City Police Department
Bellavance Trucking
Bellows Falls Police Department
Bennington County Regional Commission
Bennington County Sheriff's Office
Berlin Police Department
Burlington Police Department*
Central Vermont Regional Planning Commission*
Chittenden County MPO
Chittenden County Sheriff's Department
City of Burlington
Co-operative Insurance Companies*
Essex Junction Police Department*
Federal Highway Administration
Federal Motor Carrier Safety Administration*
FR Lafeyette, Inc.*
Franklin County Sheriff's Department
Governor's Highway Safety Program*
Hardwick-Greensboro Police Department
Hartford Police Department
Hoyle, Tanner & Associates, Inc.
Lamoille County Planning Commission*
Lamoille County Sheriff's Department
Mendon Constabulary
Mt. Mansfield Union High School Drivers Ed*
NHTSA New England Region
Northwest Regional Planning Commission
Orange County Sheriff's Department
Otis & Brooks, P.C
Rutland City Police Department*
Rutland County Sheriff's Department
Shelburne Communications Center
Shelburne Police Department
So. Windsor County Regional Planning Com.
South Burlington Police Department*
Springfield Police Department*
St. Albans City Police Department
Town of Barre*
Town of Hinesburg*
Town of Stowe*
Two Rivers-Ottauquechee Regional Commission
URS Corporation
Vergennes Police Department
Vermont Center for Justice Research
Vermont ITE Chapter, Lamoureux & Dickinson
Vermont Operation Lifesaver, Inc.
Vermont Railway
Vermont State Police*
VT Agency of Transportation*
VT Criminal Justice Training Council*
VT Department of Aging & Independent Living
VT Department of Corrections*
VT Department of Education*
VT Department of Health*
VT Department of Labor'*
VT Department of State's Attorneys*
VT Driver & Traffic Safety Education Assoc.
VT Liquor Control Department
VT Local Roads Program
Worksafe Traffic Control Industries*

Data Analysis

Vermont crash data for the five most recent available years at the time of analysis (March 2006) was analyzed by the Vermont Center for Justice Research. The crash data used represented all the crash reports that were submitted by law enforcement agencies to the Vermont Department of

Motor Vehicles between 1999 and 2003. The data analysis focused on a subset of crashes made up of the crashes that resulted in fatal and/or incapacitating injuries.

Data analysis consisted of two phases. In the first phase, the magnitude of the problem for each of the 22 AASHTO emphasis areas was determined by identifying historical trends in the form of counts and percentage for the five-year period. The second phase of the data analysis included the identification of trends and patterns for the seven critical emphasis areas selected by the Working Group. The intent of this phase was to provide enough information for developing strategies to reduce major crashes in Vermont. To supplement the analysis, recent fatal crash reports (for the period May 31, 2004 to May 31, 2005) were read and evaluated to further identify patterns and information that would not have been readily apparent by simply performing the statistical analysis of the crash data.

Critical Emphasis Areas

The critical emphasis areas (CEAs) that offer the greatest potential for reducing major crashes in Vermont were selected for the SHSP by reviewing AASHTO's list of 22 emphasis areas. To assist in the determination of these critical emphasis areas, two methods were followed. One involved comparing the 22 emphasis areas to Vermont crash data while the other sought the opinions of those involved with the four E's on a day-to-day basis.

As part of the first phase of the data analysis, counts and percentage for each of the 22 AASHTO's emphasis areas to identify the emphasis areas with the largest number of major crashes during the selected five-year period were generated.

During the course of the December 12 Kick-off Meeting, participants were divided in small working groups and each group was tasked with discussing the 22 AASHTO's emphasis areas. At the end of the discussion, participants were asked to vote for no more than three areas that they felt were the most important in reducing major crashes in Vermont.

The top emphasis areas obtained from the data analysis were compared to the list generated by the safety partners and a final list of seven critical emphasis areas was developed to build the SHSP upon.

The 2006 SHSP focuses on the following seven critical emphasis areas:

CEA 1 Keeping Vehicles on the Roadway & Minimizing the Consequences of Leaving the Road

CEA 2 Improving Young Driver Safety

CEA 3 Improving the Design & Operation of Highway Intersections

CEA 4 Increasing Seat Belt Use

CEA 5 Reducing Impaired Driving

CEA 6 Curbing Speeding and Aggressive Driving

CEA 7 Keeping Drivers Alert

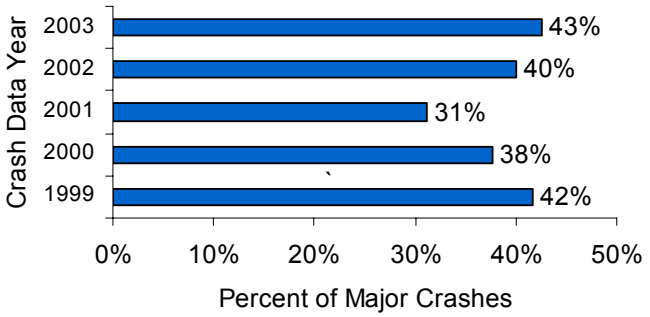
KEEPING VEHICLES ON THE ROADWAY & MINIMIZING THE CONSEQUENCES OF LEAVING THE ROAD

Background:

This emphasis area includes the major crashes in which a vehicle ran off the road and or overturned and or collided with a tree, a pole or a sign, a guardrail, ledge or boulder or any other fixed object.

Figure 2 displays the historical trend in major crashes for vehicles that left the road for the 1999 to 2003 reporting period. Although the percentage of major run-off-the road crashes initially declined during the five-year period, this percentage increased again towards the end of the period, and was essentially the same at the end of the period as at the beginning. A vehicle overturning or colliding with a tree or large bush were the most common consequences of running off the road in a major crash and represented slightly

Figure 2. Percentage of Major Crashes Related to Keeping a Vehicle on the Roadway for the Period 1999 to 2003



more than 50% of all the consequences resulting from running off the road crashes.

The Vermont crash data and or industry research also indicate that:

- 42% occur on 50 mph 2-lane rural highways
- 43% in low light/dark conditions
- 30% in wet/snowy conditions
- 32% driving too fast and 30% alcohol related
- 30% struck trees and 25% overturned

CEA Objective:

The objective for this critical emphasis area is to reduce the number of major crashes related to roadway departure by 5% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes per year involving a vehicle running off the road, hitting an object or overturning will be used to monitor the objective.

Strategies:

Based on the crash data, the task team chose to focus their strategies on 2-lane, 50 mph rural highways. A large number of run-off-road crashes involve striking trees, and to a lesser degree, other fixed objects. Vehicle overturning also occurs in a large percentage of run-off-road crashes. In order to minimize the consequences of leaving the roadway, the task team chose to focus on improving clear zones and improving side slopes, ditches, and shoulders. A disproportionate number of crashes happen in low light conditions, so several of the strategies focus on improving delineation of the roadway using signs, pavement markings, and rumble stripes. Because a large percentage of run-off-road crashes happen on town highways, the task team also developed a strategy for providing technical and financial assistance to municipalities to address high crash locations in their jurisdiction.

Strategy 1 **Pilot program to implement low cost safety improvements on local roads systems**

Description: Low cost safety improvements such as pavement markings, signs, brush cutting, removal of fixed objects from clear zone

Measure of Implementation:
- Development of process for engaging towns to participate
- Number of towns participating
- Number of high crash locations treated

Measure of Success: Reduction in run-off-road crashes involving low visibility conditions, rollovers, and fixed objects on 50 mph 2-lane rural highways

Strategy 2 **Provide improved delineation in low visibility conditions**

Description: Wider, brighter, more durable pavement markings; Edge lines where non-existent; Snowplowable raised pavement markers; Post mounted delineators

Measure of Implementation:
- Number of miles and locations treated

Measure of Success: Reduction in run-off-road crashes involving low visibility conditions on 50 mph 2-lane rural highways

Strategy 3 **Provide edgeline or centerline rumble stripes**

Description:

Measure of Implementation:
- Number of miles and locations treated

Measure of Success: Reduction in run-off-road crashes involving low visibility conditions on 50 mph 2-lane rural highways

Strategy 4 **Improved warning & delineation of unexpected changes in horizontal alignment**

Description:	Signs (chevrons, arrows, supplemental advisory speed plaques, dynamic warning, high visibility sheeting); Pavement markings (edge lines, centerlines, advance warning text/symbols, dynamic striping); Post mounted delineators
Measure of Implementation:	● Number of curves treated
Measure of Success:	Reduction in run-off-road crashes on 50 mph 2-lane rural highways, on curves

Strategy 5 **shoulder drop-offs, and provide safer side slopes and ditches**

Description:	Raise shoulders with gravel or grindings; Use molding shoe to get angled edge on new pavement; Extend toe of slope to reduce angle; Extend pipes on drainage inlet to reduce depth of ditch; Use stone in ditches to reduce depth of ditch
Measure of Implementation:	● Number of locations treated
Measure of Success:	Reduction in roll-over crashes on 50 mph 2-lane rural highways

Strategy 6 **Improve clear zone by removing, relocating, shielding, or delineating objects**

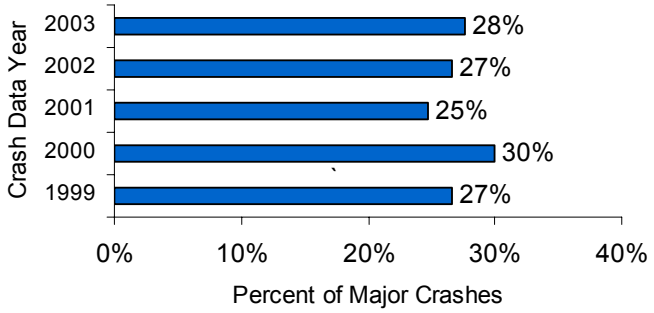
Description:	Remove/relocate fixed objects from clear zone; Relocate utility poles; Install breakaway features on fixed objects that must remain in clear zone; Implement local zoning rules to establish safe setbacks for fixed objects outside ROW; Shield fixed objects (guardrail, embankments, crash attenuators); Delineate fixed objects
Measure of Implementation:	● Number of locations treated
Measure of Success:	Reduction in fixed-object crashes on 50 mph 2-lane rural highways

Background:

This emphasis area includes the major crashes in which drivers were under 21 years of age and that resulted in fatal or incapacitating injuries.

During the 1999 to 2003 reporting period, the percentage of major crashes involving drivers under age 21 ranged between 25% and 30%. Percentages fluctuated somewhat

Figure 3. Percentage of Major Crashes that were Young Driver Related for the Period 1999 to 2003



from year to year and no clear pattern or trend is evident as shown in Figure 3. These percentages corresponded to number of crashes ranging between 111 and 143 crashes with the average number of crashes for this period being 127 crashes.

The Vermont crash data and or industry research also indicate that:

- Male drivers more likely involved than female drivers
- Young driver crashes often involve 15-24 year old passengers
- Alcohol involved in young driver major crashes 11.0% (vs. 6.8% for all crashes)
- Restraint use for 15-20 year old drivers in major crashes was only 66%

CEA Objective:

The objective for this critical emphasis area is to reduce the number of major crashes involving young divers by 19% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes per year involving young drivers will be used to monitor the objective.

Strategies:

Vermont has already had some success with establishing a Graduated Drivers License (GDL) statute. The goal of a GDL is to support the transition from non-driver to safe and experienced driver. The statute contains provisions that work to minimize the consequences of mistakes or inexperience that are a natural part of the learning to drive process. Our task team believes that the current GDL can be strengthened in ways that will reduce the devastating effects of young driver crashes.

Most young Vermonters attend a Driver's Education course at their local high school or through a private driving academy. These programs are a key in providing the foundation level of skills and understandings about safe driving practices. We need to assure that the delivery of this training is consistent and well focused statewide. We also need to provide safe and structured opportunities for beginning drivers to sharpen the skills they will need when something unexpected happens on the road.

The role of parents in helping their young family members to establish safe driving behaviors is another opportunity for improvement. Parents need to create an expectation of safety and responsibility with consequences when that expectation is not fulfilled. Providing the tools for parents to understand both their options and their obligations in this area is another part of the keeping their kids safe.

Strategy 1 **Strengthen the VT Graduated Licensing Law for young drivers**

Description: New language would be added to the existing GDL legislation to achieve:
- Restrictions on passengers in cars driven by young drivers
- Night time driving limitations for young drivers
- Primary safety belt enforcement through age 18
- No cell phone use (including hands free phones) through age 18

Measure of Implementation: ● Changes to the existing VT Graduated Licensing law

Measure of Success: Reduction of the percentage of nighttime and early morning crashes involving drivers <21 years to a rate not higher than the annual average for all drivers

Strategy 2 **Improvements in initial drivers education and advanced skill training**

Description: Standardized driver education curriculum with common educational standards; Standardized advanced driver skill training available to all young drivers

Measure of Implementation:
● Standardized driver education curriculum in VT High Schools

● Standardized skill curriculum by private instruction programs

● Increased participation by young drivers in advanced skill training

Measure of Success: Reduction of crashes in the 16-18 year age group by improving the safety habits and foundation knowledge of this group

Strategy 3 **Improve parental accountability in young driver training and behavior**

Description: Simplified brochure that explains the VT Graduated Licensing statute; Improved documentation of parental supervised driving experience; Permanent database of parental approval for young

drivers; Mandatory parental orientation as successful completion driver education course

Measure of Implementation:

- Construction and population of the databases
- Parental participation in preparation & mandatory orientation
- Parents exercising removal of graduated licenses

Measure of Success: Increased parental participation in young driver safety and development of safe driving practices.

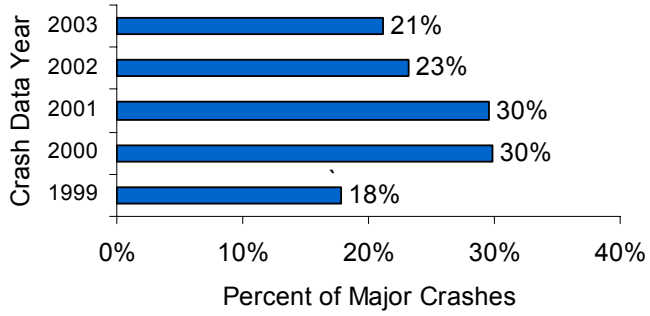
IMPROVING THE DESIGN & OPERATION OF HIGHWAY INTERSECTIONS

Background:

This emphasis area includes the crashes that took place at an intersection and that resulted in fatal or incapacitating injuries.

Over this period and as illustrated in Figure 4, the percentage of major crashes that occurred at an intersection increased considerably (from 18% to 30%), but then declined to an only slightly higher level in 2003 than in 1999 (21% versus 18%).

Figure 4. Percentage of Major Crashes that were at Intersections for the Period 1999 to 2003



The Vermont crash data and or industry research also indicate that:

- 66% occurred at T-intersections
- 28% occurred in areas with stop signs on cross street only
- Largest percentage of crashes occurred in posted speed limits of 25 – 40 mph
- Major Causes include Failure to yield, Inattention, Disregarded traffic signs or signals

CEA Objective:

The objective for this critical emphasis area is to reduce the number of major crashes at intersections by 3% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes at intersections per year will be used to monitor the objective.

Strategies:

The task team for this CEA concentrated on strategies that would be easy to implement and relatively low cost. They focused their strategies on making intersections safer by changing the operational characteristics of the intersection and improving visibility by enhanced signing and delineation, and through the use of low cost signing/pavement markings.

Additional strategies that should be implemented at particular intersections during reconstruction projects and whenever possible, include realignments, driveway closures and relocations, as well as roundabout solutions. The task team also included work plans involving education, enforcement, and outreach programs to address our targeted crashes. Furthermore, since a large percentage of the strategies most likely will be implemented by municipalities, the task team developed strategies to provide technical, financial, and educational assistance for implementation.

Strategy 1 **Improve Operation at intersections**

Description:	Restrict/eliminate turn maneuvers; Provide all way stop control where appropriate; Post advisory speed limits
Measure of Implementation:	● Number of intersections treated per year
Measure of Success:	Reduction in crashes involving broadside, left turns and right turns with pedestrians at stop controlled T-intersections

Strategy 2 **Improve visibility by providing enhanced signing and delineation**

Description:	Signs and markings where non currently exist; Brighter and or larger/wider signs and markings; Provide stop bar on side road approach; Supplemental pavement markings & signs; Provide lane assignment with signs and markings
Measure of Implementation:	● Number of intersections treated per year
Measure of Success:	Reduction in crashes involving rear-end, right angle or turns at stop controlled T-intersections

Strategy 3 **Improved maintenance and visibility of signs and markings**

Description: Timely replacement of knocked down signs; Thinning and clearing brush/trees for sight improvement; Replacement of faded and outdated signage and markings; Evaluate existing location of signs and change as needed; Install larger and or brighter signage and markings; Install advanced warning with markings and signs

Measure of Implementation: ● Number of intersections treated per year

Measure of Success: Reduction in crashes involving rear-end, right angle or turns at T-intersections

Strategy 4 **Improve Geometry at Intersections**

Description: Redesign of selected intersections

Measure of Implementation: ● Number of intersections treated per year

Measure of Success: Reduction in right angle, left turns, and rear end crashes

Strategy 5 **Implement physical changes on the approaches to and at intersections**

Description: Driveway closures/relocation in the vicinity of intersections; Installations of islands on minor-road approach to intersection; Provision of appropriate pedestrian and/or bicycle facilities to reduce conflict; Installation of rumble strips on approaches

Measure of Implementation: ● Number of intersections treated per year

Measure of Success: Reduction in crashes involving excessive speed, bicyclists or pedestrians, non-compliance with stop signs at T-intersections

Strategy 6 **Improve driver compliance with traffic control devices and traffic laws at intersections through increased enforcement**

Description: Enforcement at intersections with a high stop sign violation rates and excessive speed

Measure of Implementation: ● Increased hours of targeted enforcement

Measure of Success: Reduction in right angle and turning crashes that occur on rural road, 2 lane, T intersections

Strategy 7 **Reduce speed at intersections**

Description: Identify intersections with excessive speeds

Measure of Implementation: ● Treated number of intersections

Measure of Success: Reduction in right angle and turning crashes that occur on rural road, 2 lane, T intersections

Strategy 8 Public Awareness at High Accident Locations

Description: PSA announcements are run in local newspapers, on local radio and television stations

Measure of Implementation: ● Messages written, produced and aired

Measure of Success: Reduction in crashes at intersections with the highest 10 % of crash rates

Strategy 9 Local Program for Identifying and Prioritizing High Accident

Description: Towns and villages develop programs to identify problem areas within their jurisdictions

Measure of Implementation: ● Program developed and number of towns participating

Measure of Success: Reduce crashes at intersections in participating municipalities

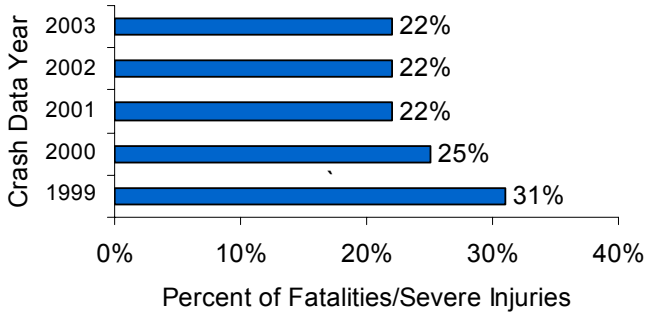
INCREASING SEAT BELT USE

Background:

This emphasis area includes the crashes in which vehicle occupants who were not using a restraint, such as shoulder and lap belt, shoulder belt only, lap belt only, child safety restraint and or airbag, suffered fatal or incapacitating injuries.

During the 1999 to 2003 reporting period, the percentage of vehicle occupants fatally/severely injured who were not using a restraint device declined substantially before leveling off in recent years (31% percent of fatalities/severe injuries in 1999 compared to 22% in 2003).

Figure 5. Percentage of Vehicle Occupants Injured and not Using a Restraint Device for the Period 1999 to 2003



The Vermont crash data and or industry research also indicate that:

- 50% fatalities were unrestrained
- 20% of drivers in major crashes were unrestrained
- 26% of passenger in major crashes were unrestrained
- Younger drivers & passengers (18-24) had the lowest restraint use
- Lowest restraint use in pickup trucks

CEA Objective:

The objective for this critical emphasis area is to reduce the number of fatal crashes in which occupants suffering fatal injuries were unbelted by 10% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes per year in which occupants suffering fatal injuries were unbelted will be used to monitor the objective.

Strategies:

This Critical Emphasis Area was driven by the fact that it is against the law for people not to wear a seat belt when traveling in a motor vehicle on Vermont's highways, and by data telling us that half of the people killed in traffic crashes in Vermont were not wearing protective seatbelts. Philip Weiser, NHSTA Division I Administrator, said to a group of safety partners on September 7, 2006, that one of the most effective methods of reducing highway fatalities was the use of seat belts.

The strategies outlined in this CEA speak directly to the need for greater public knowledge of the consequences of a highway death, steadfast enforcement of laws that govern driver's actions on the highways and a recommendation for a standard seat belt law. In the latter matter, it is noteworthy that other CEAs have a similar recommendation noting that a standard driver protection law will actually save lives and mitigate the extenuating circumstances surrounding the emotional and economic losses stemming from someone being killed in a traffic crash on Vermont highways.

Strategy 1 **Raise awareness of the importance of safety belt & the link to air bag effectiveness**

Description: State-wide Public Awareness Campaign:
- Refine media messages for priority target population located in Chittenden, Washington, Rutland, Windsor and Windham counties.
- Special messages for secondary target population located in Caledonia, Lamoille, and Orleans counties

Measure of Implementation: ● Messages written, produced and aired

Measure of Success: Increase safety belt use in the target groups to at least 75%

Strategy 2 **Enact a Standard Safety Belt Law**

Description: Seek re-enforcement from editorials and columnists in newspapers; Enlist favorable lawmakers

Measure of Implementation: ● Standard Seat Belt Law enacted

Measure of Success: Increase safety belt use to 90% (general population)

Strategy 3 **Increased enforcement of traffic safety laws in Vermont**

Description: Click It or Ticket or similar campaigns at the state and local level

Measure of Implementation: ● Law enforcement community creates and fine-tunes the program

Measure of Success: More seat belt citations issued & More motorists buckle up

Strategy 4 **Engage the Vermont business community in mitigation efforts**

Description: Company or business policies requiring use of seat belts on company business

Measure of Implementation: ● Companies and businesses establish and enforce seat belt policies

Measure of Success: Reduction in the number of fatalities and injuries sustained by individuals delivering products and services in Vermont

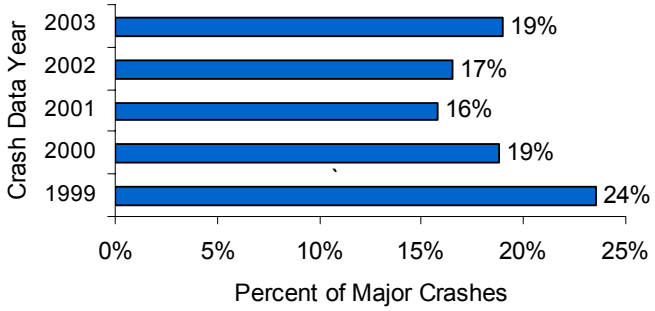
Reducing Impaired Driving

Background:

This emphasis area includes the major crashes resulting in fatal or incapacitating injuries and for which the crash reports indicated that at least one driver was operating under the influence of medicine, drugs or alcohol or had been drinking; and or that a driver was cited for DUI, and or that the BAC or drug test result was positive.

The percentage of major crashes related to alcohol declined from 24 percent of major crashes in 1999 to 16 percent of major crashes in 2001, but then increased to 19 percent in 2003. Although the percentage of alcohol-related major crashes was less in 2003 than in 1999, the percentage rose noticeably between 2002 and 2003, which may reflect the start of an upward trend.

Figure 6. Percentage of Major Crashes that were Impaired Driver Related for the Period 1999 to 2003



The Vermont crash data and or industry research also indicate that:

- 79% Male
- 16% aged 20 or less, 78% aged 21-54
- 0.120 to 0.159 is highest Blood Alcohol Concentration represented
- Peaks during Summer (June to August); Greatest number on Saturday between 10:00 pm and 2:00 am
- Could make 50 to 200 trips before being arrested
- 2/3 of those who cause alcohol related crashes have never been arrested before for impaired driving
- 40% Not wearing a seat belt

CAE Objective:

The objective for this critical emphasis area is to reduce, the number of major crashes related to alcohol by 19% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes related to alcohol per year will be used to monitor the objective.

Strategies:

The experts at the national level tell us that people drive after having too much to drink 50 to 200 times before being arrested and that 2/3 of the people who drove after having too much to drink and who were involved in a crash never were arrested before for DUI. Vermont surveys of the population tell us that a large proportion of the Vermont population do not think that they are likely to be arrested for driving under the influence.

The set of strategies identified by our task team aims at increasing the perception that both arrest and punishment will happen. Both of these are necessary for having credible enforcement and adjudication processes that can deter impaired driving. Further more some of the strategies proposed will empower individuals with the understanding of what is being impaired and what are the consequences of driving while being impaired to self and others.

Strategy 1 **Improve the public awareness of impairment**

Description:	Targeted print and television/radio media campaigns; Targeted informational brochures and posters; Periodic educational segments on the news; Form a MADD-like State Office
Measure of Implementation:	● Number of messages aired ●Paycheck stuffer reaching 10% of working population per year ● MADD-like state Office within a year
Measure of Success:	Increase in the personal understanding of when a person is impaired

Strategy 2 **Improve the public awareness of the consequences of impaired driving**

Description:	Play videos that carry compelling messages about the risks and impacts of DUI including stories told by victims of DUI crashes, and other video clips in a variety of high traffic sites (e.g., Motor Vehicle Offices Waiting Rooms, Middle and High Schools, Driver-ed Classes) and at training sessions provided for retail alcohol sellers and servers
Measure of Implementation:	● Number of establishments and training programs that plays the videos and display the printed materials ● Number of messages aired
Measure of Success:	Increased awareness of the DUI problem and fewer cases of patrons being over-served

Strategy 3 **Create the Public Perception that DUI apprehension is likely**

Description:	Greater publicizing of existing enforcement programs; Targeted periodical targeted print and television/radio media campaigns; Coordinate high-visibility checkpoints and saturations patrols; Increase the general public's awareness of DUI Hot-Lines
Measure of Implementation:	● Standard policy on DUI apprehension ● Number of messages aired ● A pilot program of "Phantom" Checkpoints established
Measure of Success:	Increase in the perception of likelihood of being arrested

Strategy 4 **Create the Public Perception that Punishment Is Likely**

Description:	Greater publicizing of DUI laws; Strengthening of civil and criminal cases; Reducing the likelihood of suppression in civil and criminal cases
Measure of Implementation:	● Passage of new DUI legislation in 2007-2008 session ● Regional trainings to prosecutors performed ● Discussion with State's Attorneys
Measure of Success:	Fewer cases suppressed or reduced

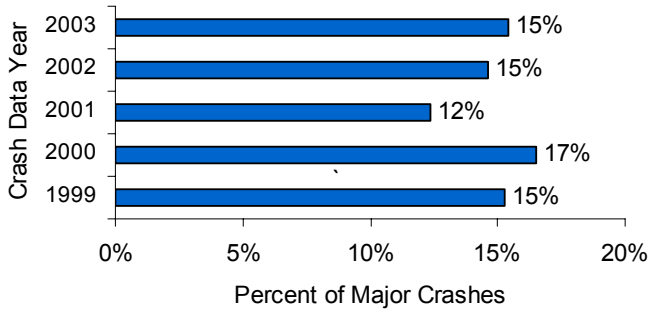
CURBING SPEEDING AND AGGRESSIVE DRIVING

Background:

This emphasis area includes the major crashes the resulted in fatal or incapacitating injuries and in which at least one of the drivers was reported to either having driven at an excessive speed, followed too closely or driving erratically, recklessly or in an aggressive manner.

Figure 7 shows that speed and other forms of aggressive driving just mentioned contributed to 15 percent of major crashes in three of the five years of the study period. In the remaining two years, percentages were 17 percent and 12 percent, which represents fairly normal fluctuations.

Figure 7. Percentage of Major Crashes Related to Aggressive Driving for the Period 1999 to 2003



The Vermont crash data and or industry research also indicate that:

- 60% occur in Bennington, Windsor, Windham, Chittenden counties
- 57% occur on State highways
- 65% involve male operators
- 24% involve alcohol
- 65% of occupants restrained

CEA Objective:

The objective for this emphasis area is to reduce the number of major crashes involving aggressive driving by 7% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes per year related to excessive speed, following too closely or driving erratically, recklessly or in an aggressive manner will be used to monitor the objective.

Strategies:

One of the primary reasons for most motor vehicle crashes is speed and aggressive driving, although it seems that these words have become interchangeable. The Vermont law enforcement community, at all levels, is using virtually every tool at its disposal to successfully combat this problem.

Creating the perception in the public mind that speeding and aggressive driving leads to apprehension and punishment is a proven tactic witness the highly successful “Click It or Ticket” program each year for the past four years. In this program, the use of seat belts spiked in excess of 80% percent because of the public’s perception that disciplinary action would take place if individuals failed to buckle up. The same principle is established in two of these four strategies.

The remaining strategies are focused on educating the public that speeding and aggressive driving are actually dangerous. These strategies are accomplished in several ways including the use of Vermont’s public media, Vermont’s business community and

the strengthening of the punishment piece of Vermont's laws governing speed and aggressive driving.

Strategy 1 **Create the public perception that punishment is likely**

Description: Enact aggressive driving statute two or more violations equal penalty of 5 points; Public education campaign

Measure of Implementation:
- Information to law makers provided
- New legislation introduced
- Number of messages developed and aired

Measure of Success: Increased perception that punishment is likely

Strategy 2 **Educating the public to why it is dangerous**

Description: Public education campaign to teens

Measure of Implementation:
- Number of messages developed and aired
- Materials developed

Measure of Success: Noted change of driver behavior

Strategy 3 **Create the public perception that apprehension is likely**

Description: Enforcement Campaign; Paid media about enforcement evaluation

Measure of Implementation:
- Increased number of hours of enforcement and officers
- Number of messages aired

Measure of Success: Increased perception that apprehension is likely

Strategy 4 **Improvements in the education of novice drivers**

Description: Driver education component about driver attitude

Measure of Implementation: Number of schools and instructors offering the new attitude module

Measure of Success: Better driver exam scores

Strategy 5 **Remedial driver education course**

Description: Education course for repeat offenders to reduce points

Measure of Implementation: ● Establishment of adequate resources to meet the demand

Measure of Success: Reduced violations by repeat offenders

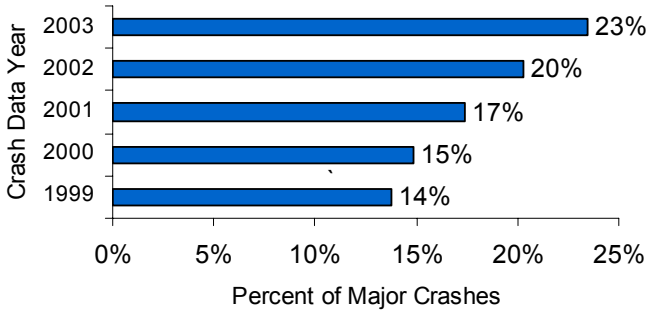
KEEPING DRIVERS ALERT

Background:

This emphasis area includes the major crashes that resulted in fatal or incapacitating injuries and in which at least one of the drivers was reported to have inattention, fatigued or asleep as a contributing factor to the crash or in which one of the drivers had a driver's condition listed as fell asleep or fatigued.

Figure 8 presents the combined percentage of for the contributing factors or driver's conditions listed above. More specifically, the percentage of major crashes listing inattention, fatigue or the driver falling asleep as a contributing factor increased between 1999 (12 percent) and 2001 (15 percent), declined slightly in 2002 (14 percent), then increased again in 2003 (16 percent). These could reflect normal fluctuations, or an upward trend since the percentage in 2003 is the highest for the five-year period. On the other hand, the percentage of major crashes that appeared to have been caused by a driver being fatigued or falling asleep increased substantially during the last two years of the period, although they still comprise a small percentage of all major crashes. In 1999, two percent of major crashes involved drivers who were fatigued or fell asleep, but in 2003, seven percent of major crashes did.

Figure 8. Percentage of Major Crashes Related to Keeping Drivers Alert for the Period 1999 to 2003



The Vermont crash data and or industry research also indicate that:

- 62% occurred in rural locations
- 70% of rural crashes occurred on a main road
- 40% of urban crashes occurred at an intersection or a driveway
- Drowsiness increases a driver's risk of a crash by at least a factor of four
- Reaching for a moving object increased the risk of a crash by 9 times
- looking at an external object by 3.7 times
- dialing a hand-held device such as a cell phone by almost 3 times
- talking or listening on a hand-held device by 1.3 times

CEA Objective:

The objective for this critical emphasis area is to reduce the number of major crashes related to keeping drivers alert by 2% by 2010 from 2003 levels.

CEA Performance Measures:

The number of major crashes per year related to drowsiness, falling asleep and inattention will be used to monitor the objective.

Strategies:

In today's multi-tasking demands are creating hazardous conditions on our highways. Drivers today are finding themselves cognitively distracted or sleep-deprived or both because of the demands on their time by business and personal obligations. And, by all indications, this is not an issue that is going away.

In general, our task team feels that drivers are unaware of the dangers associated with inattentive driving and drowsiness. Our task team also recognizes that various types of technologies affect how people are driving, but singled out the use of cell phones because of its conflicting demand with the driving task.

The strategies presented target the cause for the inattention (cell phones) and roadway solutions for fatigue (rumble strips) as well as provide an aggressive, enhanced awareness program focusing on the dangers associated with distractions and fatigue and the effectiveness of safety rest stops.

The collaboration between behavioral adjustment and roadway improvement is expected to be a useful tool in combating this very serious issue.

Strategy 1 <u>Enact cell phone restriction legislation</u>

Description:	Laws to prohibit cell phone usage for young drivers (under age of 18), for drivers over the age of 18, and for school bus drivers (except in event of emergency)
Measure of Implementation:	● Laws passed
Measure of Success:	Reduction in the usage of cell phones while driving

Strategy 2 **Install shoulder and/or centerline rumble strips**

Description:	Installation on non-interstate paved highways with documented lane departure crashes related with driver inattention
Measure of Implementation:	● Number of miles and number of locations treated
Measure of Success:	Reduction or elimination in lane departure crashes in treated areas associated with driver inattention

Strategy 3 **Enhance effectiveness/awareness of safety rest stops**

Description:	Outreach through education, television/radio campaigns, PSA's and signs along national highway system routes; Improve existing rest area facilities
Measure of Implementation:	● Number of media campaigns, PSA's ● Adequate facilities available and utilized ● Increased number of locations for public/private
Measure of Success:	Reduction in crashes involving a drowsy/fatigued driver

Strategy 4 **Increase awareness of dangers associated with distractions while driving**

Description:	Print and television/radio media campaigns aimed at the general driving public and targeted message at high risk population segments; Informational brochures and posters distributed in targeted establishments and outreach through employers
Measure of Implementation:	● Number of messages to the general driving public and the targeted audiences
Measure of Success:	Increased awareness resulting in a reduction in crashes

Implementation Process and Relationship to other Plans

In the months following the acceptance of the SHSP, the Core Group and the seven task teams will meet with other safety partners to promote the SHSP, present sample action plans and discuss the implementation of the strategies by these other parties.

One of the key elements to the success of implementing any of the critical strategies is public knowledge and acceptance of government and private efforts to mitigate an unsafe highway traffic issue. To accomplish this, a two-phase, concurrent approach for a comprehensive outreach, communications, and marketing/public relations plan will be followed. Phase I will be

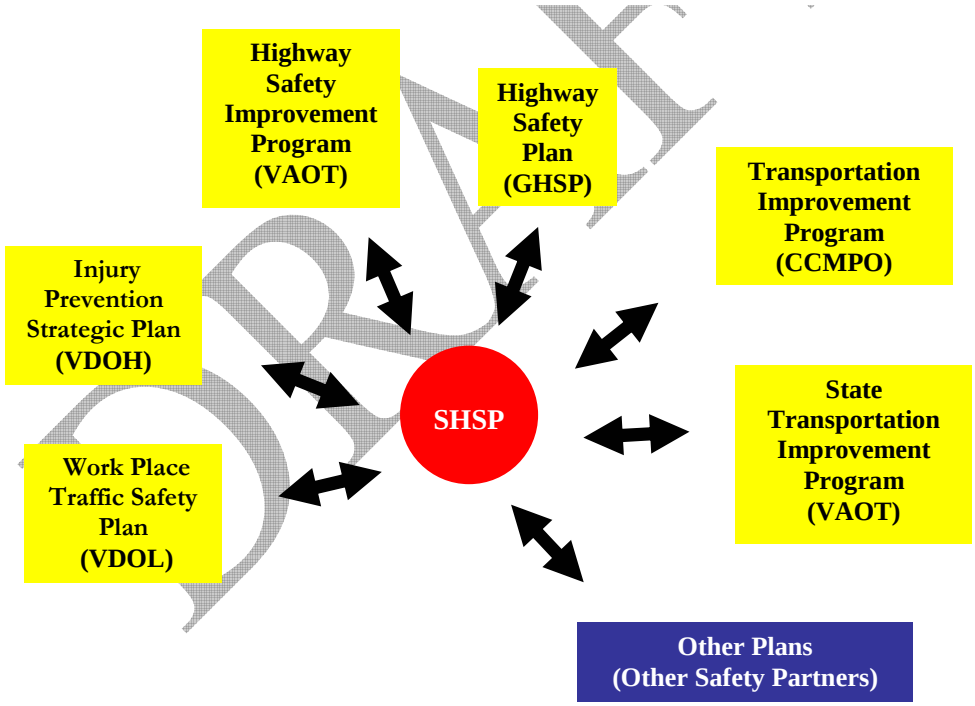
directed towards the continued involvement, expansion and commitment of safety partners and stakeholder groups in the ongoing development and implementation of the SHSP while Phase II will be the public outreach component to assist in disseminating the results of our work and implementing strategies for addressing the critical emphasis areas that the Vermont data have identified as key areas/populations needing attention in our efforts to reduce highway fatalities and serious injury crashes.

As the implementation of the SHSP moves forward and to give an "ownership" position in the implementation of any highway safety strategy impacting their employees' workplace, it will be advantageous to involve Vermont's business community in the evolvement of the SHSP since highway traffic safety directly involves a workplace for many of Vermont's businesses.

As created by the safety partners, the SHSP developed for Vermont is intended to be at the center of all the safety planning activities in Vermont[1]. It is the vision that the critical strategies identified in the SHSP will be implemented through other plans belonging to safety partners as illustrated in Figure 9.

As suggested in Figure 9, each safety partner entity is to review the work plans in which they have been identified as a key player and include, in its respective plan or work program, activities or projects that will lead to the implementation of the strategy (ies). To facilitate the

Figure 9. Relationship between SHSP and Other Plans



[1] It is to be understood that the SHSP concentrates on the areas where a reduction in fatal crashes is more likely to be substantial and provides the tools necessary beyond existing efforts to contribute significantly to the goal of lowering fatal and incapacitating injury crashes. In the broader context of highway safety, the SHSP is to be operated, to the extent possible, in conjunction with other safety programs, some of which may or may not be directly related to major crashes (examples of efforts not listed in the SHSP but none the less important to the VT population include work zone safety and safe routes to school just to name these two).

implementation of the critical strategies, a series of “sample action plans” have been developed for several of the critical strategies. These sample action plans provides some of the major steps that an organization would take to accomplish the critical strategy.

A schedule of projects is to be developed by the Core Group as part of the implementation process through specific meetings with the entities identified in the work plans and that will be responsible for the actual implementation of the critical strategies. The schedule is to be updated yearly following SHSP plan updates and annual implantation progress meeting/reporting by the safety partners.

Evaluation Process

The evaluation of the SHSP and its success in achieving the overall target goal is greatly dependant on the implementation of the strategies by the safety partners. Achieving the overall SHSP target goal is also highly dependant on the identification of new problem trends that may occur between now and the overall target date.

All evaluations and analyses using crash data will be performed by the consultant retained for this purpose. Evaluations of strategies using special surveys and other methods will be performed by the safety partners responsible for the implementation of the strategies.

SHSP Updates

Given that the implementation of the strategies listed in the SHSP will take place over time and that a number of years of crash data is required to properly evaluate a strategy, specific revisions to the critical strategies being part of the initial implementation set will only be done at the end of 2009, unless interim measures indicate a need to modify the strategies before then. Based on data analysis and resource availability, new critical strategies could be added yearly. At least one SHSP workshop will be held yearly for safety partners to discuss implementation progress and major crash trends. This workshop will be held in the spring of each year to permit safety partners to program revised or new strategies.